



Rothera Wharf

Tailor made sheet piles for extreme jobsite conditions

Alex Mørch-Petersen | 23rd September 2020, København

Extreme jobsite conditions ?

- You can work 6 months per year maximum
- Neighborhood restriction are no noise, no pollution, no light
- No rental machinery, no raw material available
- You have to jetwash any machinery or material brought on jobsite
- Safety first : closest hospital is 5 hours by plane

Extreme jobsite conditions ?

- Welcome in Antarctica !



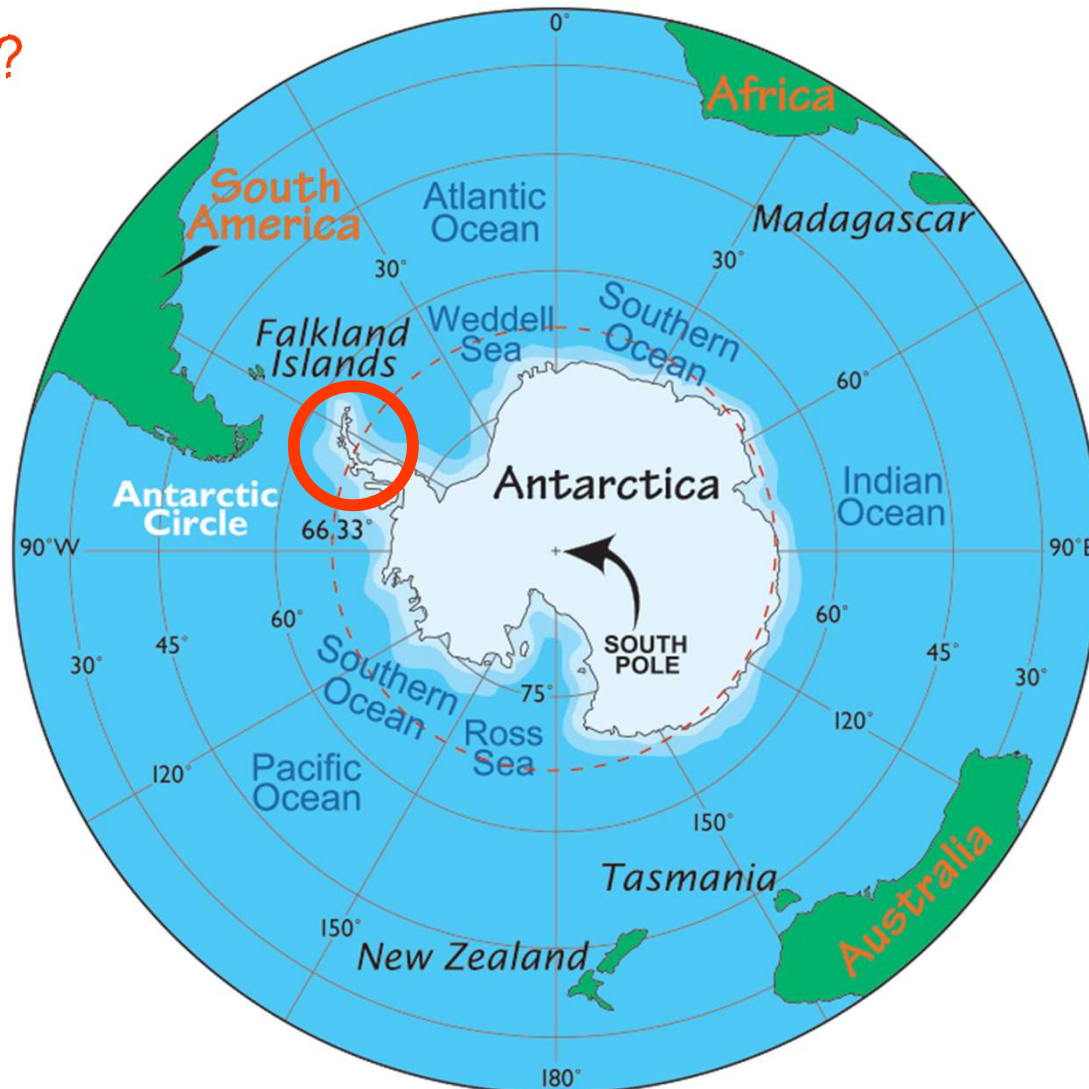
Extreme jobsite conditions ?

- You can work 6 months per year maximum, highest temperature is 5 degrees
- Neighborhood restriction are no noise, no pollution, no light
- No rental machinery, no raw material available
- You have to jetwash any machinery or material brought on jobsite
- Safety first : closest hospital is 5 hours by plane

Where is Rothera wharf ?



Where is Rothera wharf ?



Context



- In April 2014 The Chancellor announced that the Government would fund a new £200 million polar research **vessel** to put UK scientists at the forefront of climate and ocean research in both Antarctica and the Arctic.
- This ship, and the suite of modernization projects which support it, represents **the largest Government investment in Antarctic and Arctic science infrastructure** since the 1980s.



Rothera research station



© Adam Bradley (British Antarctic Survey)

Rothera research station



Rothera research station



Old wharf – built in 1991



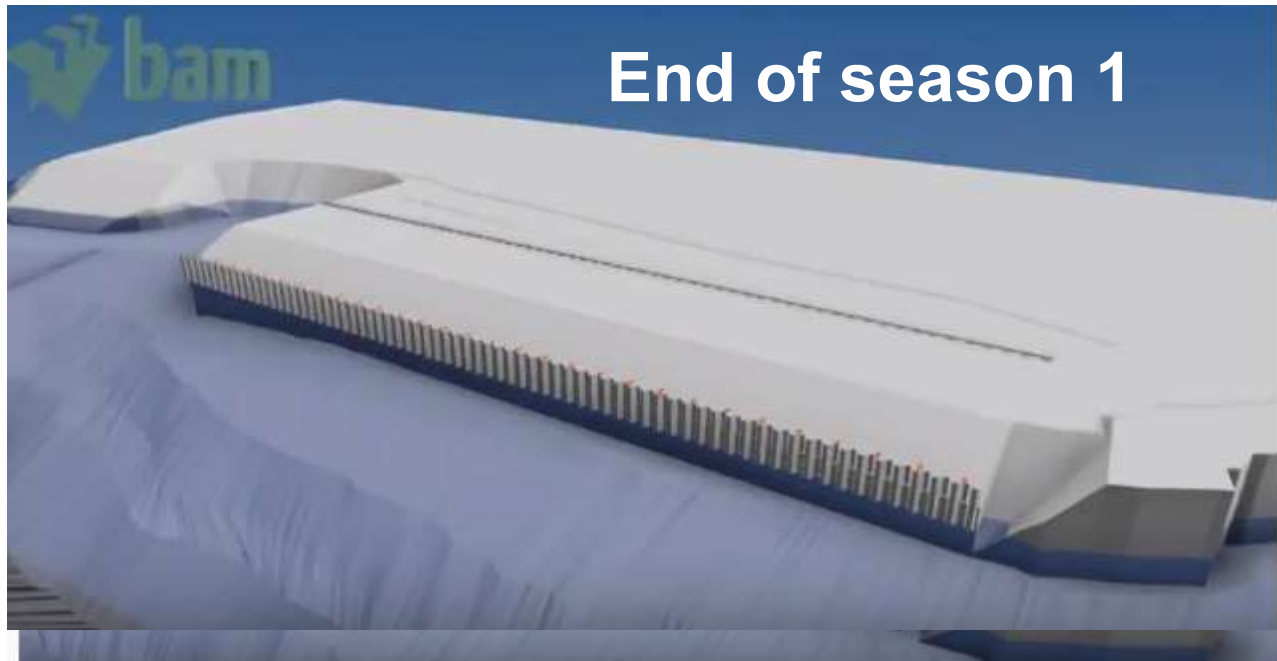
Old wharf – built in 1991



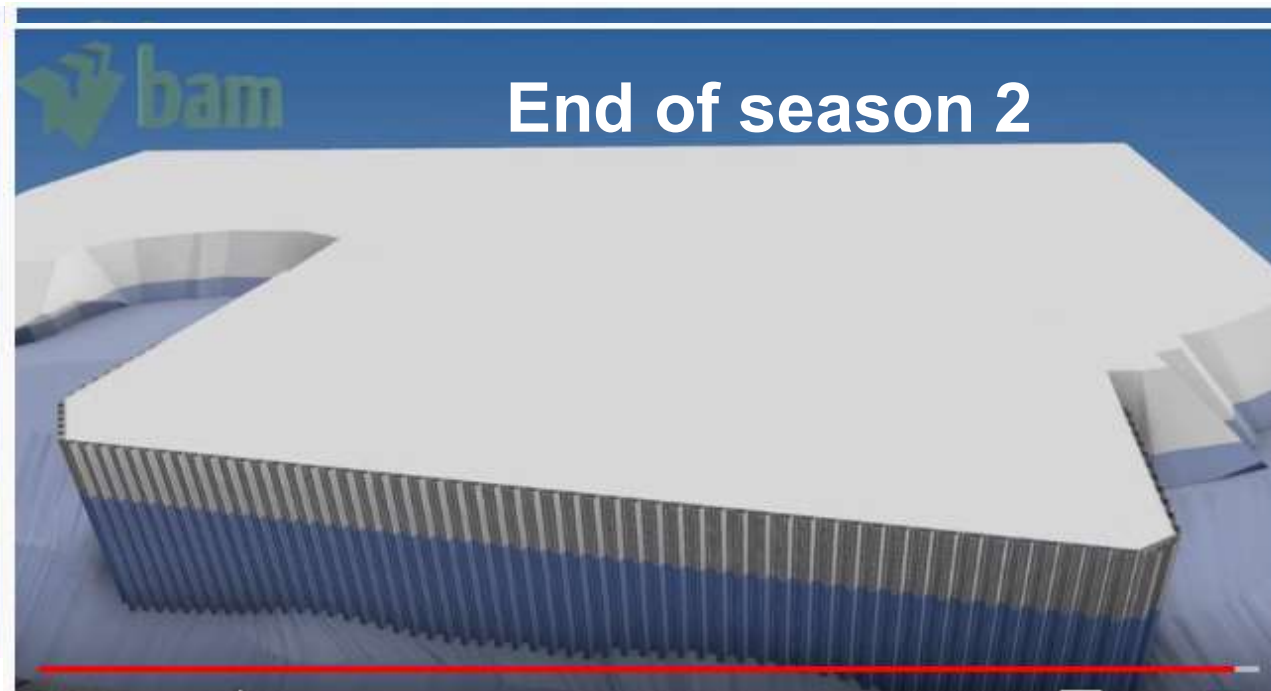
Tailor made sheet piles ?

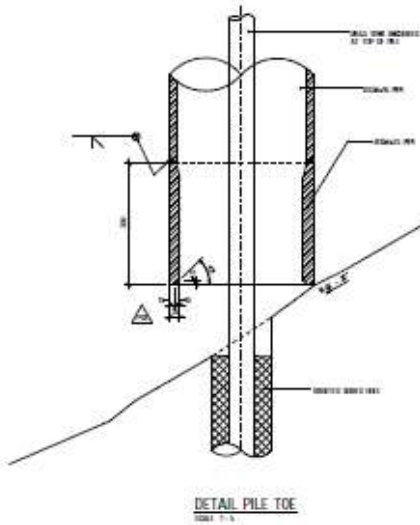
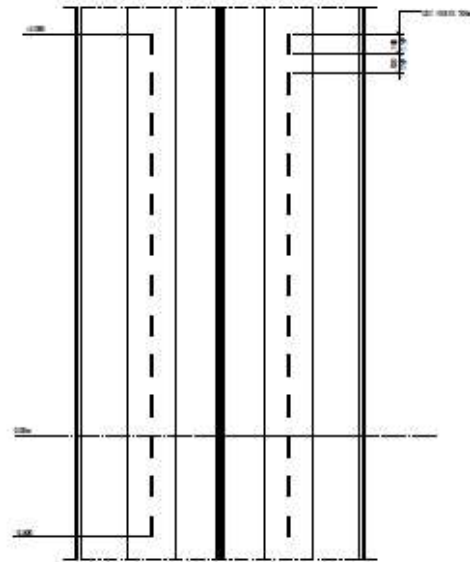
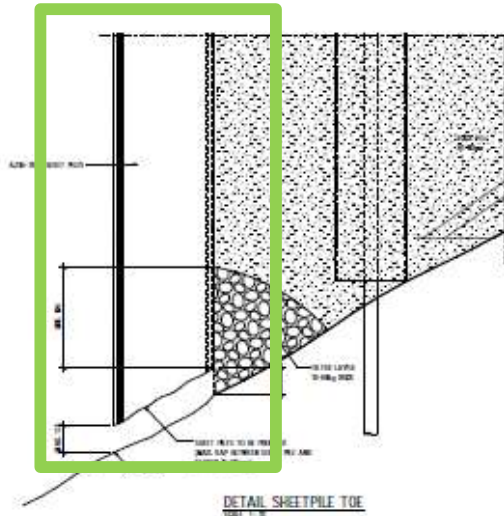
- Specific steel grade for low temperature water ?
S355GP, with Charpy V Notch test 27J @-20degrees
- Logistics ?
Delivery CIP Teesport (UK) then loaded on a combined vessel to Rothera Wharf
- Specific profile ?
Mix of AZ18-700, AZ36-700N, and AZ28-700, maximum 18 m long
- Big quantity ?
435 tons in total, 206 pieces
- Tight timing ?
Vessel departure date was known one year before !

Project for the new wharf



Project for the new wharf

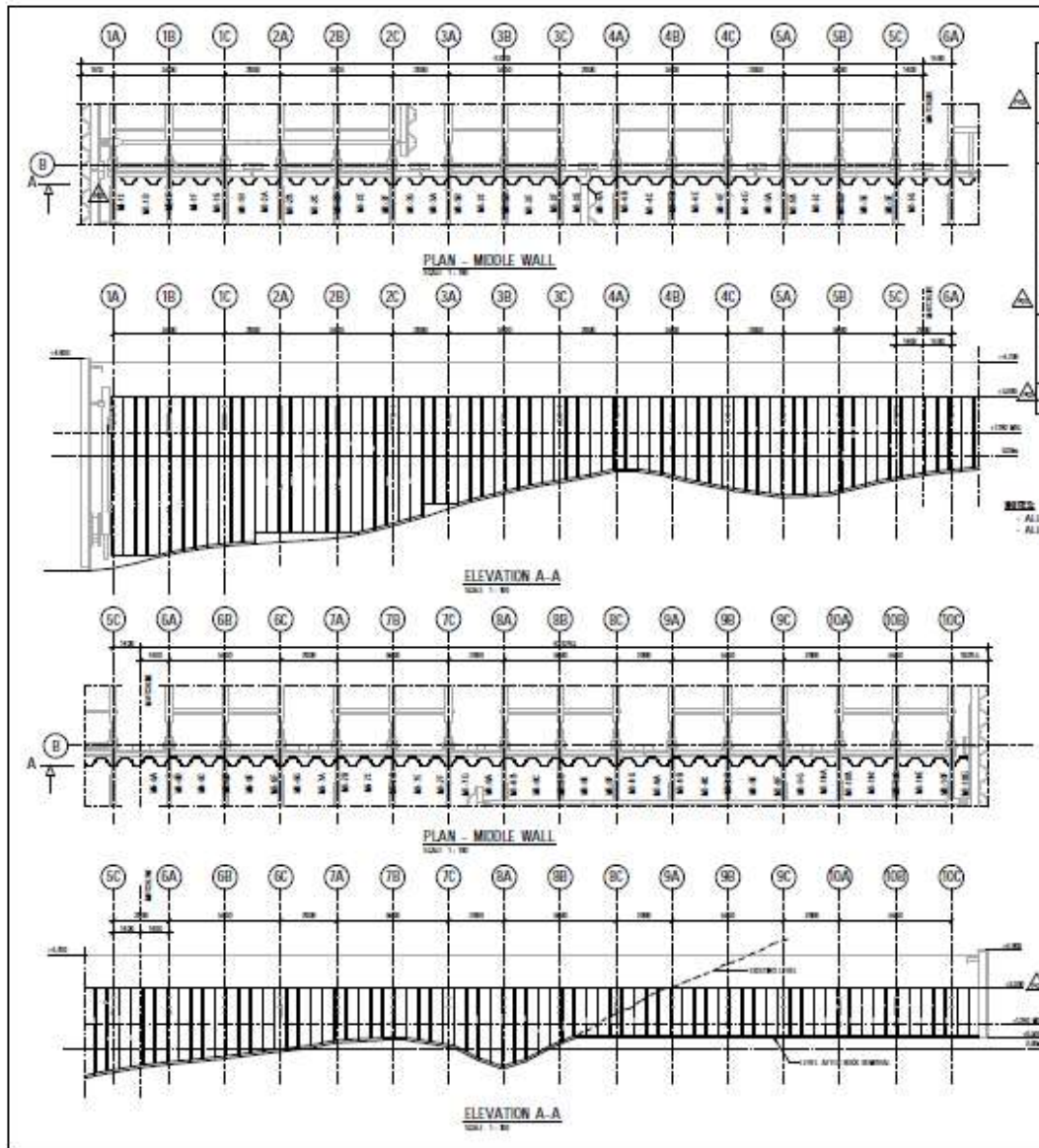




SAFETY HEALTH AND ENVIRONMENTAL INFORMATION	
IN ACCORDANCE WITH THE APPLICABLE LOCAL, NATIONAL AND INTERNATIONAL REGULATIONS, THE TYPE OF CONSTRUCTION WORK IS CLASSIFIED AS A HIGH RISK WORK. DETAILS IN THIS DRAWING MUST BE CONSIDERED AS A HIGH RISK WORK. CONSULT THE SAFETY OFFICER.	
THIS DRAWING IS NOT TO BE USED FOR CONSTRUCTION AND/OR FOR THE CONSTRUCTION OF ANY STRUCTURE. THIS DRAWING IS NOT TO BE USED FOR CONSTRUCTION OF ANY STRUCTURE.	
<ul style="list-style-type: none"> THE DRAWING CAN BE USED TO PREPARE CONSTRUCTION AND/OR FOR CONSTRUCTION OF THE STRUCTURE. ONLY TYPICAL DETAILS AND/OR DIMENSIONS ARE TO BE USED. DIMENSIONS IN THIS DRAWING MUST BE CHECKED AGAINST THE ORIGINAL DRAWING AND/OR TO BE CHECKED AGAINST THE ORIGINAL DRAWING. CONSTRUCTION OF ANY STRUCTURE MUST BE IN ACCORDANCE WITH THE APPLICABLE LOCAL, NATIONAL AND INTERNATIONAL REGULATIONS. 	
<ul style="list-style-type: none"> NO APPLICABLE LOCAL, NATIONAL AND INTERNATIONAL REGULATIONS ARE NOTED IN THIS DRAWING. A CONSTRUCTION ALLOWANCE IS NOTED IN THE ORIGINAL DRAWING. ALL STEEL ELEMENTS MUST BE CORROSION PROTECTED FOR THE DESIGN LIFE OF THE STRUCTURE. CORROSION PROTECTION IS TO BE PROVIDED FOR THE DESIGN LIFE OF THE STRUCTURE. CORROSION PROTECTION IS TO BE PROVIDED FOR THE DESIGN LIFE OF THE STRUCTURE. 	
FOR MORE INFORMATION ON CONSTRUCTION AND/OR FOR CONSTRUCTION OF ANY STRUCTURE, CONSULT THE SAFETY OFFICER.	

NOTES
 - ALL DIMENSIONS IN mm UNLESS NOTED OTHERWISE.
 - ALL LEVELS IN m RELATIVE TO CD UNLESS NOTED OTHERWISE.
 - STEEL GRADE SHALL UNLESS NOTED OTHERWISE.

BRITISH ANTARCTIC SURVEY	
ROTHERA POINT WHARF UPGRADE	
WHARF - WALLS DETAILS - SHEET 3	
Delta Marine Consultants 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000	Date: 1.25.18 Scale: 1:5 Author: MJC Checker: MJC Title: MJC Project: SAA-RO/DMC-0102-003 Drawing Number: 003
	FOR REVIEW



SAFETY HEALTH AND ENVIRONMENTAL INFORMATION

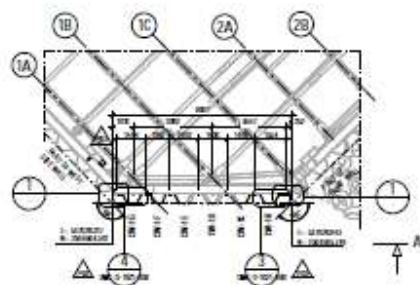
BE AWARE OF THE HAZARDOUS SUBSTANCE ASSOCIATED WITH THE TYPE OF CONSTRUCTION WORK OR RELATED OPERATIONAL WORKS TO BE CARRIED OUT IN ACCORDANCE WITH THE FOLLOWING HAZARDOUS SUBSTANCE INFORMATION:

WORK SHOULD BE CARRIED OUT ACCORDING TO THE TYPE OF CONSTRUCTION WORK OR RELATED OPERATIONAL WORKS TO BE CARRIED OUT IN ACCORDANCE WITH THE FOLLOWING HAZARDOUS SUBSTANCE INFORMATION:

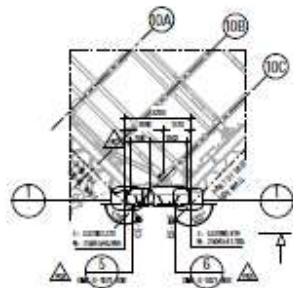
- 1. ALL OPERATIONS SHOULD BE CARRIED OUT IN ACCORDANCE WITH THE HAZARDOUS SUBSTANCE INFORMATION AND REGULATORY REQUIREMENTS.
- 2. ALL LEVELS ARE IN RELATIVE TO CD UNLESS NOTED OTHERWISE.

GRIDLINE	NAME	TOP LEVEL (MCD)	BOTTOM LEVEL (MCD)	DEPTH (MCD)	STATUS
1	MC1	1.200	1.800	1.100	NO
2	MC2	1.200	1.800	1.100	NO
3	MC3	1.200	1.800	1.100	NO
4	MC4	1.200	1.800	1.100	NO
5	MC5	1.200	1.800	1.100	NO
6	MC6	1.200	1.800	1.100	NO
7	MC7	1.200	1.800	1.100	NO
8	MC8	1.200	1.800	1.100	NO
9	MC9	1.200	1.800	1.100	NO
10	MC10	1.200	1.800	1.100	NO
11	MC11	1.200	1.800	1.100	NO
12	MC12	1.200	1.800	1.100	NO
13	MC13	1.200	1.800	1.100	NO
14	MC14	1.200	1.800	1.100	NO
15	MC15	1.200	1.800	1.100	NO
16	MC16	1.200	1.800	1.100	NO
17	MC17	1.200	1.800	1.100	NO
18	MC18	1.200	1.800	1.100	NO
19	MC19	1.200	1.800	1.100	NO
20	MC20	1.200	1.800	1.100	NO
21	MC21	1.200	1.800	1.100	NO
22	MC22	1.200	1.800	1.100	NO
23	MC23	1.200	1.800	1.100	NO
24	MC24	1.200	1.800	1.100	NO
25	MC25	1.200	1.800	1.100	NO
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30	MC30	1.200	1.800	1.100	NO
31	MC31	1.200	1.800	1.100	NO
32	MC32	1.200	1.800	1.100	NO
33	MC33	1.200	1.800	1.100	NO
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36	MC36	1.200	1.800	1.100	NO
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39	MC39	1.200	1.800	1.100	NO
40	MC40	1.200	1.800	1.100	NO
41	MC41	1.200	1.800	1.100	NO
42	MC42	1.200	1.800	1.100	NO
43	MC43	1.200	1.800	1.100	NO
44	MC44	1.200	1.800	1.100	NO
45	MC45	1.200	1.800	1.100	NO
46	MC46	1.200	1.800	1.100	NO
47	MC47	1.200	1.800	1.100	NO
48	MC48	1.200	1.800	1.100	NO
49	MC49	1.200	1.800	1.100	NO
50	MC50	1.200	1.800	1.100	NO
51	MC51	1.200	1.800	1.100	NO
52	MC52	1.200	1.800	1.100	NO
53	MC53	1.200	1.800	1.100	NO
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57	MC57	1.200	1.800	1.100	NO
58	MC58	1.200	1.800	1.100	NO
59	MC59	1.200	1.800	1.100	NO
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84	MC84	1.200	1.800	1.100	NO
85	MC85	1.200	1.800	1.100	NO
86	MC86	1.200	1.800	1.100	NO
87	MC87	1.200	1.800	1.100	NO
88	MC88	1.200	1.800	1.100	NO
89	MC89	1.200	1.800	1.100	NO
90	MC90	1.200	1.800	1.100	NO
91	MC91	1.200	1.800	1.100	NO
92	MC92	1.200	1.800	1.100	NO
93	MC93	1.200	1.800	1.100	NO
94	MC94	1.200	1.800	1.100	NO
95	MC95	1.200	1.800	1.100	NO
96	MC96	1.200	1.800	1.100	NO
97	MC97	1.200	1.800	1.100	NO
98	MC98	1.200	1.800	1.100	NO
99	MC99	1.200	1.800	1.100	NO
100	MC100	1.200	1.800	1.100	NO

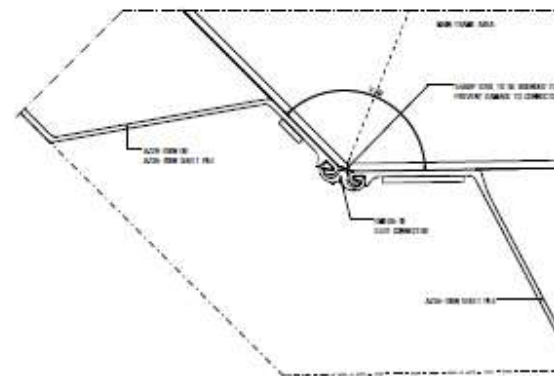
BRITISH ANTARCTIC SURVEY	
ROTHERA POINT	
WHARF UPGRADE	
WHARF - WALLS	
PLAN AND ELEVATION - MID WALL	
FOR REVIEW	
Project: SAA 401-DMC-101-002	Date: 14/05/18



PLAN - WEST CORNER WALL

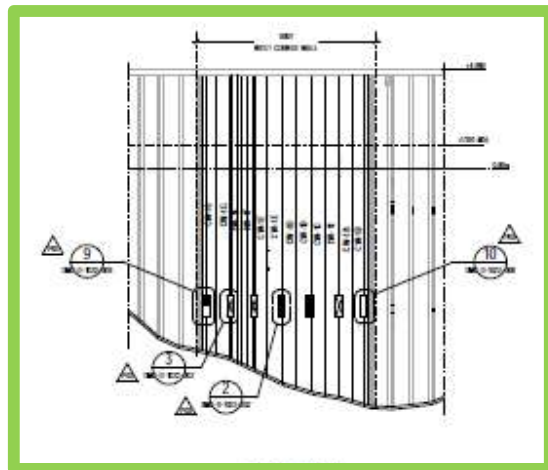


PLAN - EAST CORNER WALL



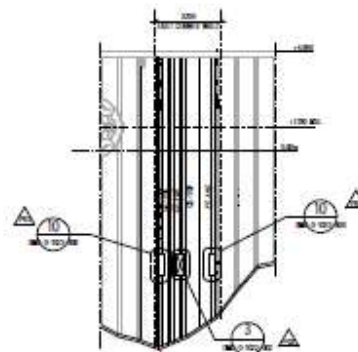
DETAIL 1

SCALE 1:5



ELEVATION A-A

SCALE 1:50



ELEVATION B-B

SCALE 1:50

- LEGEND**
- DETAIL 2 "CLAW"
(ENC-D-1022-002)
 - DETAIL 2Y "CLAW"
(ENC-D-1022-002)
 - DETAIL 3 "CLAMP"
(ENC-D-1022-002)
 - DETAIL 3
(ENC-D-1022-000)
 - DETAIL 10
(ENC-D-1022-000)

SAFETY HEALTH AND ENVIRONMENTAL INFORMATION

IN ADDITION TO THE USUAL SAFETY INFORMATION ASSOCIATED WITH THE TYPE OF CONSTRUCTION WORK OR RELATED TO MATERIALS, WHEN DETAILS ARE USED FOR WORKING, NOTE THE FOLLOWING WORK SAFE AIDS AND PRECAUTIONS:

WORKERS MUST WEAR APPROPRIATE AND ASSOCIATED WITH THE TYPE OF CONSTRUCTION WORK OR RELATED TO MATERIALS, WHEN DETAILS ARE USED FOR WORKING, NOTE THE FOLLOWING WORK SAFE AIDS AND PRECAUTIONS:

- THE DRAWING CAN BE USED TO PREPARE FABRICATION AND ERECTION DRAWINGS OF THE STEEL FRAME.
- SAFETY PRELIMINARY TO BE PROVIDED ON SITE, BASED ON THE DRAWING INFORMATION AND THE TYPE OF WORK.
- ONLY TYPES OF STEEL JOINTS OR CONNECTIONS SHOWN IN THE DRAWING INFORMATION DETAILS MUST BE USED UNLESS OTHERWISE NOTED OTHERWISE AND USED TO FABRICATE THE WORK.
- SECTION LINE SHOULD BE DRAWN IN FRONT OF THE STEEL.
- SURFACE FINISHING TO FOLLOWING ON CONNECTION DETAILS IS REQUIRED FOR ACCORDANCE TO THE CODES IN FIELD CONDITIONS. FINISHING IS REQUIRED TO BE NOTED, AND ALLOWING FOR CORROSION AND ALLOWANCE IN THE WELDED JOINTS.
- FOR SAFETY PRECAUTIONS SEE DRAWING ENC-D-1022-000.
- NO APPLICATIONS SHOULD BE MADE OF COATING TO FABRICATE OR FOR THE WORK STRUCTURES, UNLESS OTHERWISE SPECIFIED IN THE DRAWING INFORMATION.
- ALL STEEL ELEMENTS MUST BE PROTECTED BY AN ANTI-RUST COAT WHEN THE STRUCTURE IS TO BE DEMOLISHED OR THE FABRICATION SHOULD BE NOTED TO BE REMOVED.

FOR MORE INFORMATION FOR FABRICATION AND INSTALLATION OF DETAILS SEE DRAWING ENC-D-1022-000.

WHARF PILE SCHEDULE						
IDENTITY	NAME	TIP LEVEL (M)	BOTTOM LEVEL (M)	LENGTH (M)	TYPE	STANDARD / WEIGHT
1	CP-10	0.000	-11.000	11.000	ALUM. STEEL	11.000/2000
1	CP-10	0.000	-11.000	11.000	ALUM. STEEL	11.000/2000
1	CP-10	0.000	-11.000	11.000	ALUM. STEEL	11.000/2000
1	CP-10	0.000	-11.000	11.000	ALUM. STEEL	11.000/2000
1	CP-10	0.000	-11.000	11.000	ALUM. STEEL	11.000/2000
1	CP-10	0.000	-11.000	11.000	ALUM. STEEL	11.000/2000
1	CP-10	0.000	-11.000	11.000	ALUM. STEEL	11.000/2000

WHARF CO. SCHEDULE						
IDENTITY	NAME	TIP LEVEL (M)	BOTTOM LEVEL (M)	LENGTH (M)	TYPE	STANDARD / WEIGHT
2	CP-10	0.000	-11.000	11.000	ALUM. STEEL	11.000/2000
2	CP-10	0.000	-11.000	11.000	ALUM. STEEL	11.000/2000

- NOTES:**
- ALL DIMENSIONS IN MM UNLESS NOTED OTHERWISE.
 - ALL LEVELS IN M RELATIVE TO CD UNLESS NOTED OTHERWISE.
 - STEEL GRADE GROUP UNLESS NOTED OTHERWISE.
 - OVERLAP WITH SHEET PILES T.B.S. BY D.M.

BRITISH ANTARCTIC SURVEY

ROTHERA POINT WHARF UPGRADE

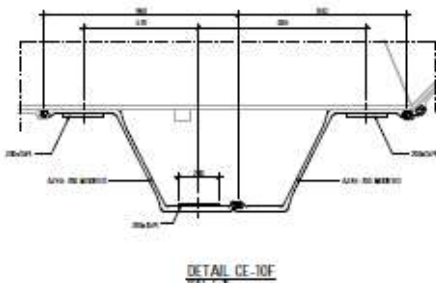
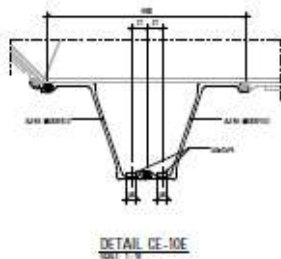
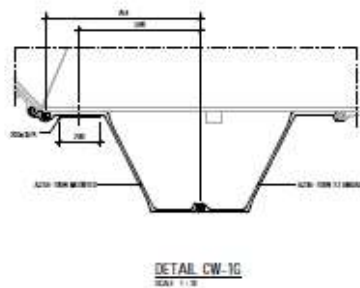
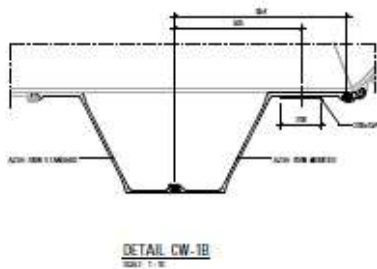
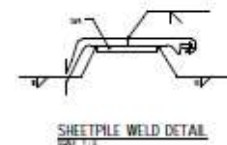
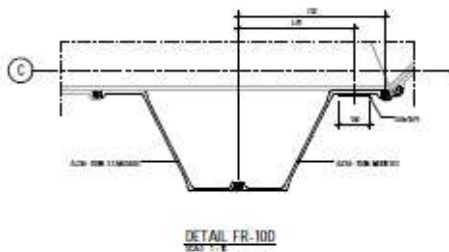
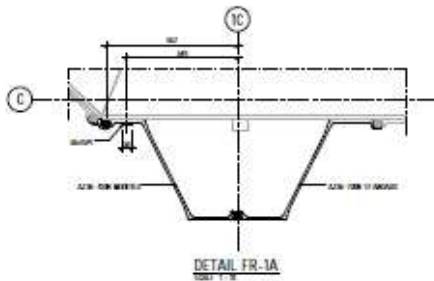
WHARF - WALLS

PLAN AND ELEVATION - CORNER WEST AND EAST

Delta Marine Consultants

FOR REVIEW

03 83 25/08/18

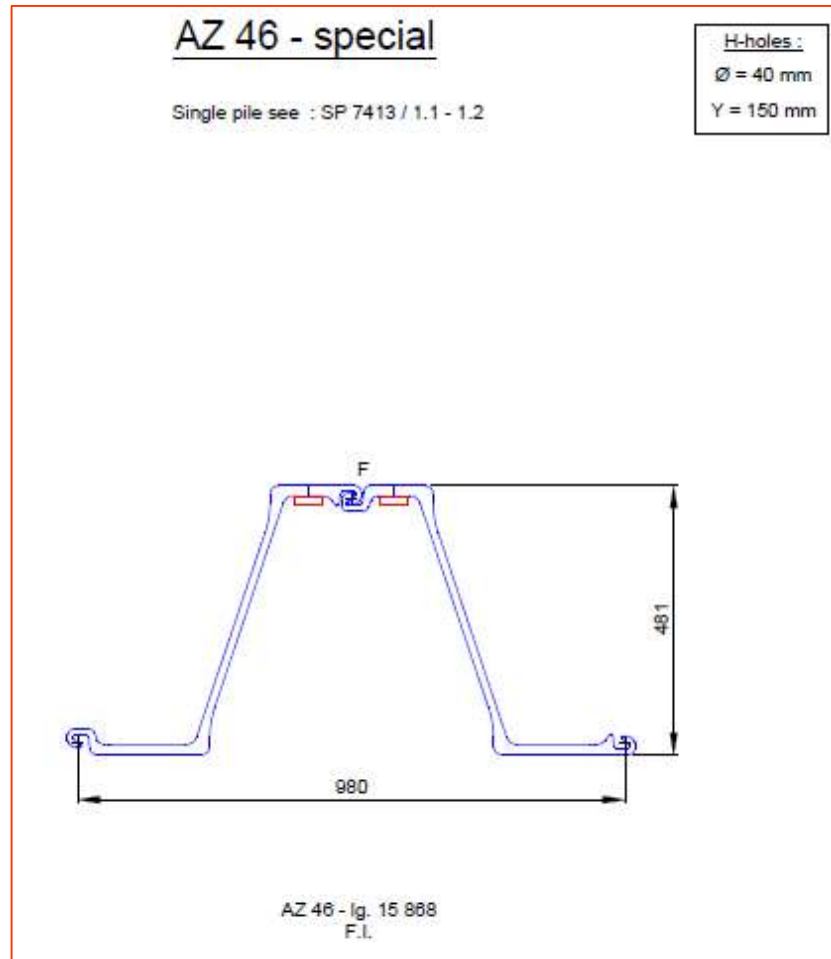


SAFETY HEALTH AND ENVIRONMENTAL INFORMATION	
<p>IN ACCORDANCE WITH THE HEALTH, SAFETY AND ENVIRONMENT (HSE) REGULATIONS OF THE UNITED KINGDOM, THE DESIGNER HAS CONSIDERED THE SAFETY, HEALTH AND ENVIRONMENTAL RISKS OF THE WORK DESCRIBED IN THIS DOCUMENT.</p> <p>THIS DOCUMENT IS INTENDED TO PROVIDE INFORMATION TO THE CONTRACTOR WHO WILL BE RESPONSIBLE FOR THE DESIGN AND CONSTRUCTION OF THE WORK DESCRIBED IN THIS DOCUMENT.</p> <p>THE CONTRACTOR IS ADVISED TO CONSIDER THE SAFETY, HEALTH AND ENVIRONMENTAL RISKS OF THE WORK DESCRIBED IN THIS DOCUMENT AND TO TAKE APPROPRIATE PRECAUTIONS TO MINIMIZE THESE RISKS.</p> <p>THE CONTRACTOR IS ADVISED TO CONSIDER THE SAFETY, HEALTH AND ENVIRONMENTAL RISKS OF THE WORK DESCRIBED IN THIS DOCUMENT AND TO TAKE APPROPRIATE PRECAUTIONS TO MINIMIZE THESE RISKS.</p>	<p>THIS DOCUMENT IS INTENDED TO PROVIDE INFORMATION TO THE CONTRACTOR WHO WILL BE RESPONSIBLE FOR THE DESIGN AND CONSTRUCTION OF THE WORK DESCRIBED IN THIS DOCUMENT.</p> <p>THE CONTRACTOR IS ADVISED TO CONSIDER THE SAFETY, HEALTH AND ENVIRONMENTAL RISKS OF THE WORK DESCRIBED IN THIS DOCUMENT AND TO TAKE APPROPRIATE PRECAUTIONS TO MINIMIZE THESE RISKS.</p>

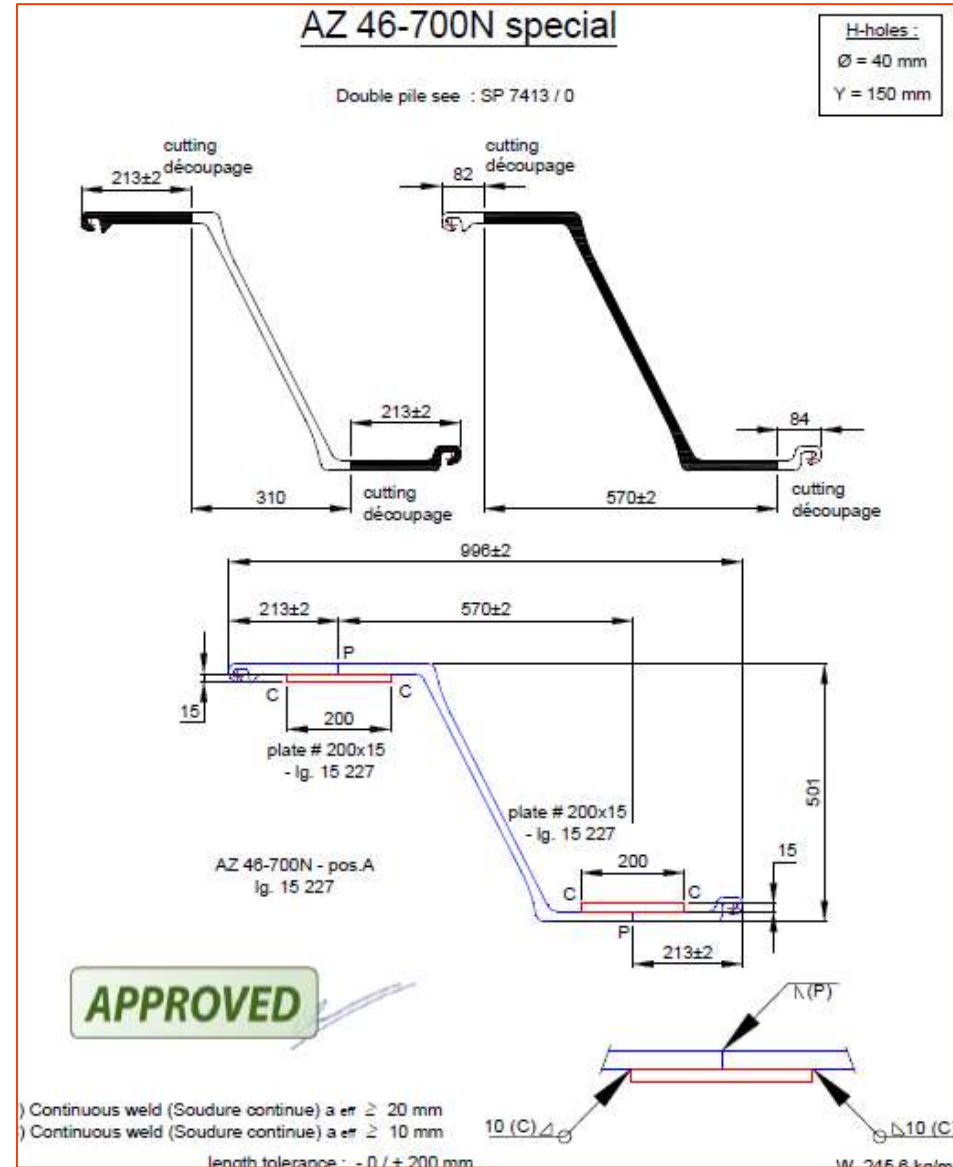
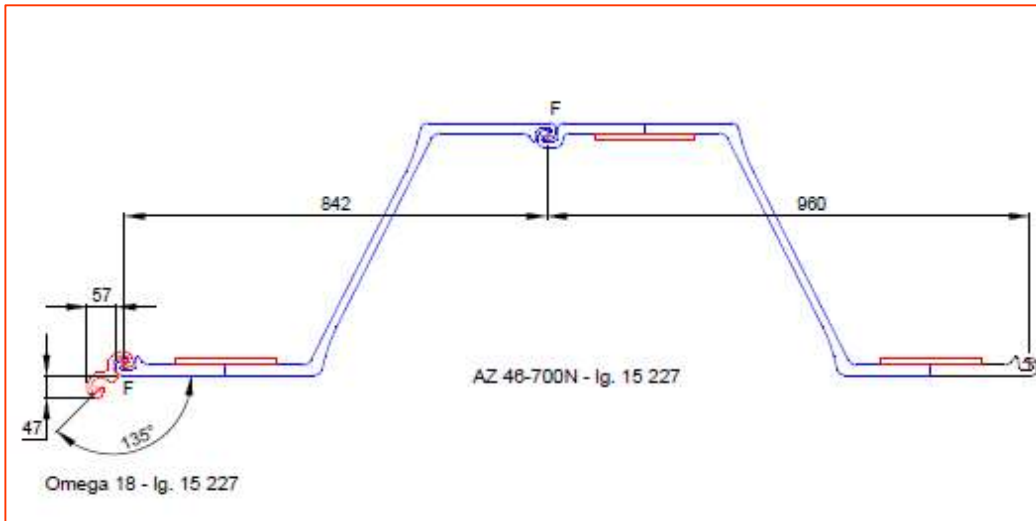
- NOTES:**
- ALL DIMENSIONS IN mm UNLESS NOTED OTHERWISE.
 - ALL LEVELS IN m RELATIVE TO CD UNLESS NOTED OTHERWISE.
 - STEEL GRADE S275JR UNLESS NOTED OTHERWISE.

BRITISH ANTARCTIC SURVEY		Scale	
ROTHERA POINT WHARF UPGRADE		Revision	
WHARF - WALLS SHEETPILE DETAILS		Date	
 Delta Marine Consultants 250, Victoria Road, Victoria, British Columbia V8W 2E1 Tel: (604) 681-1111 Fax: (604) 681-1112 Email: info@delta-marine.com	1:10 ASG ASG ASG ASG ASG ASG ASG ASG ASG ASG	Date Date Date Date Date Date Date Date Date Date Date	
	Project No: Drawing No: Drawing Date: Drawing Scale:	01 03 25/08/18	Date Date Date Date

Narrowing



Widening



Subcontracting in Luxembourg



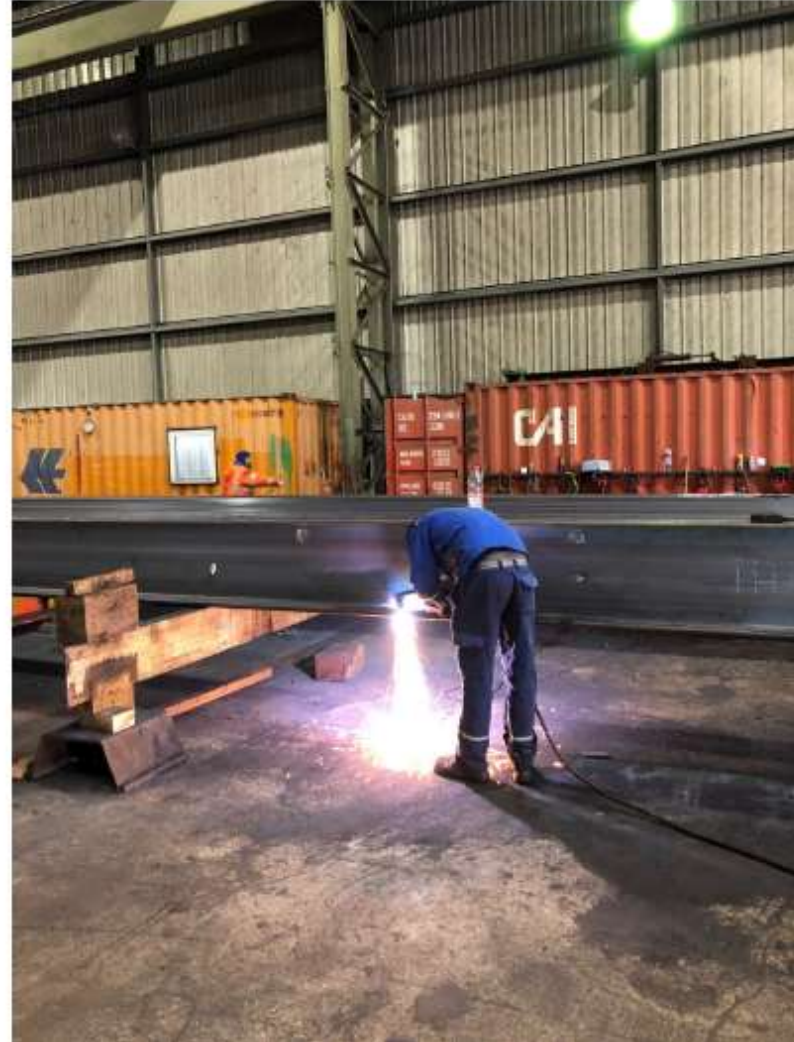
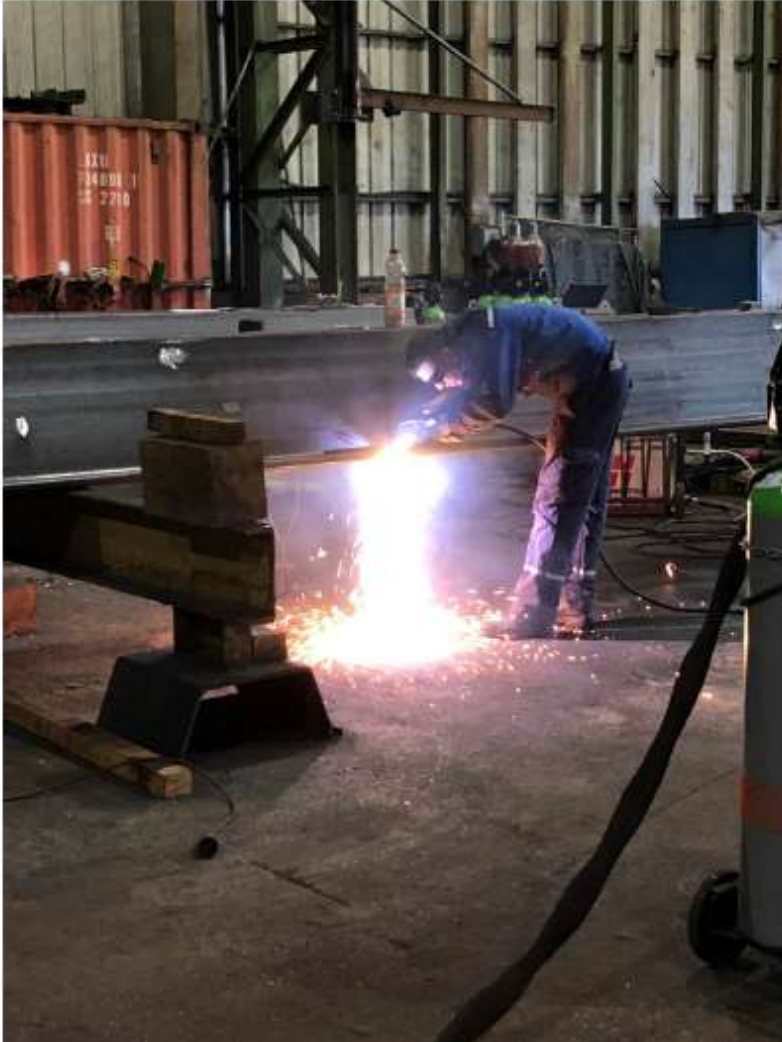
Subcontracting in Luxembourg



Subcontracting in Luxembourg



Subcontracting in Luxembourg



Subcontracting in Luxembourg



Subcontracting in Luxembourg



Teesport – jetwashing the material



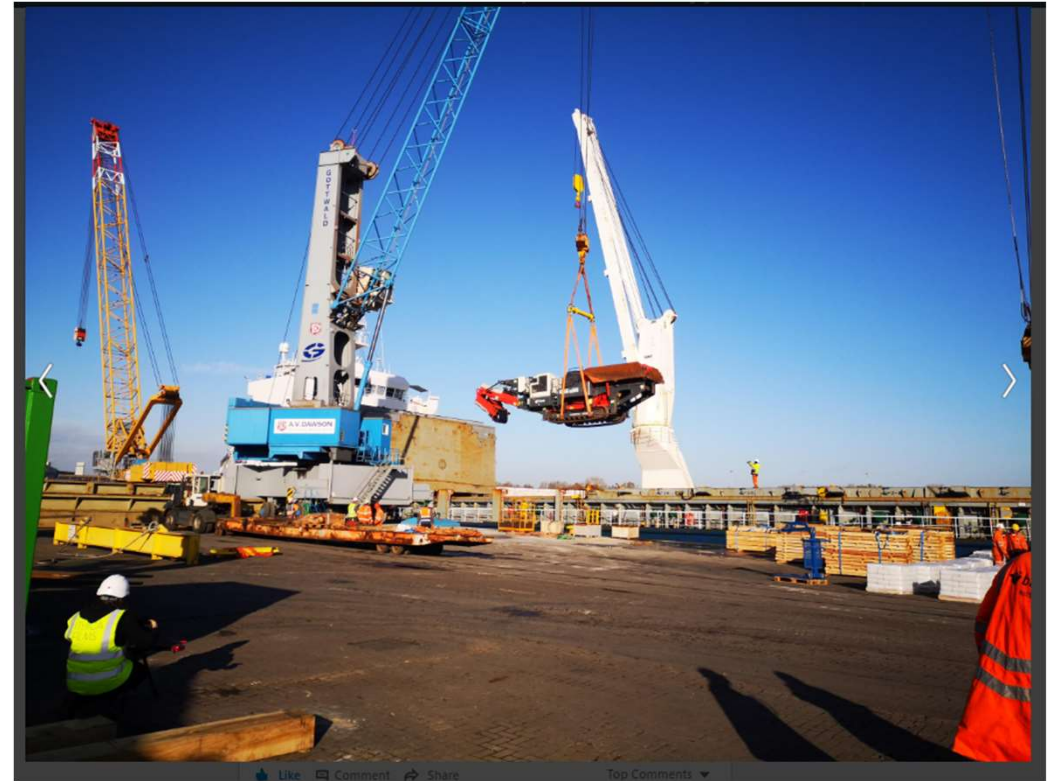
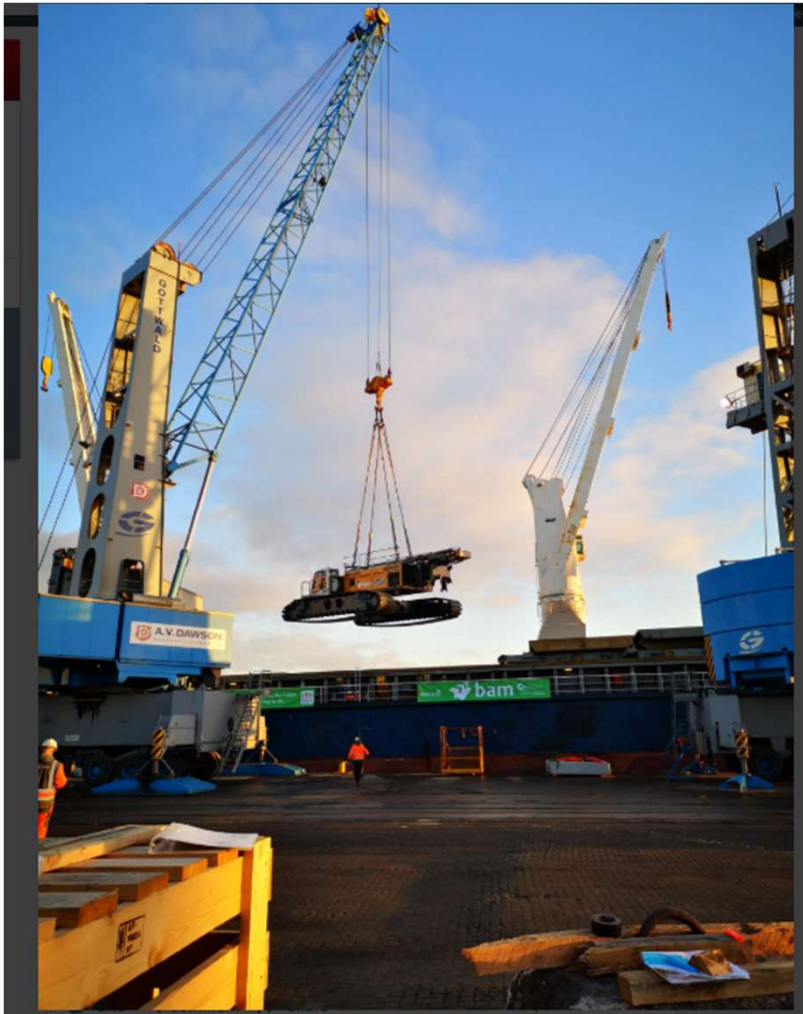
Teesport - storage



Teesport – Pre-assembly of the mega structure



Loading in Teesport



Shipping



Unloading



Quarring



Dismantling the old wharf



Dismantling the old wharf



Dismantling the old wharf



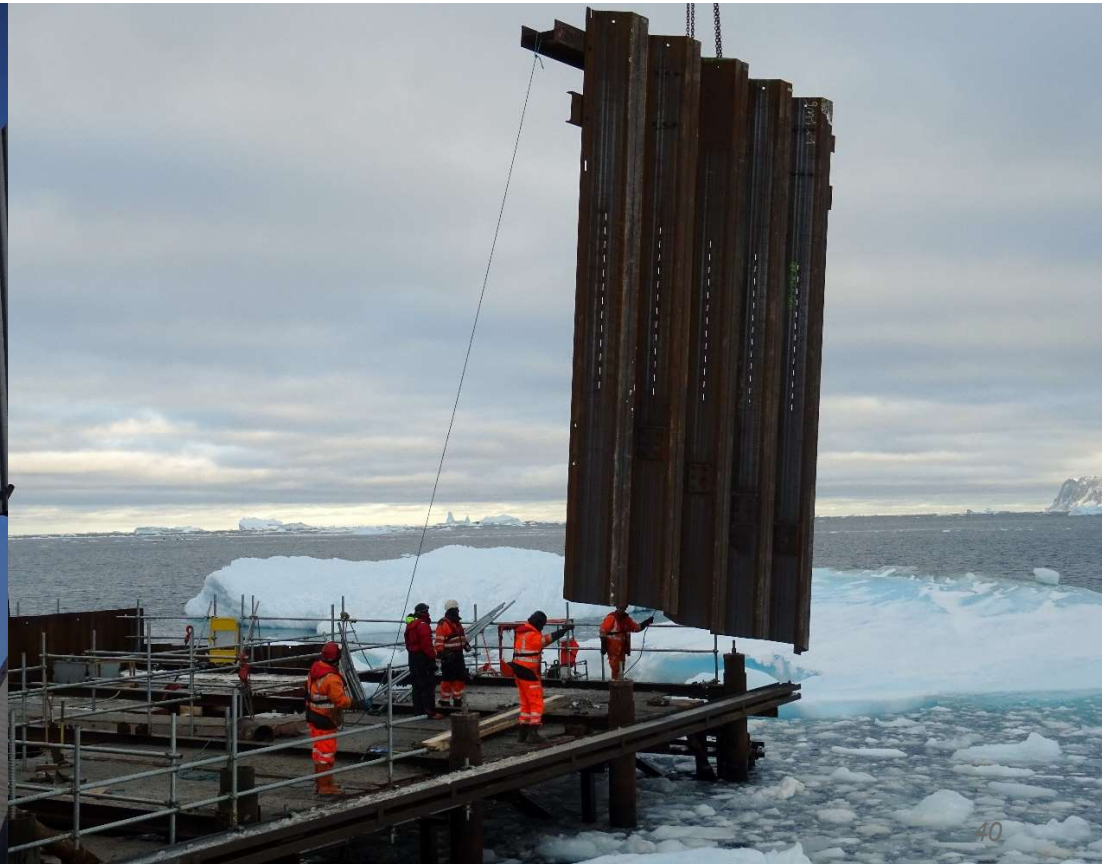
Installation of the 1st structure



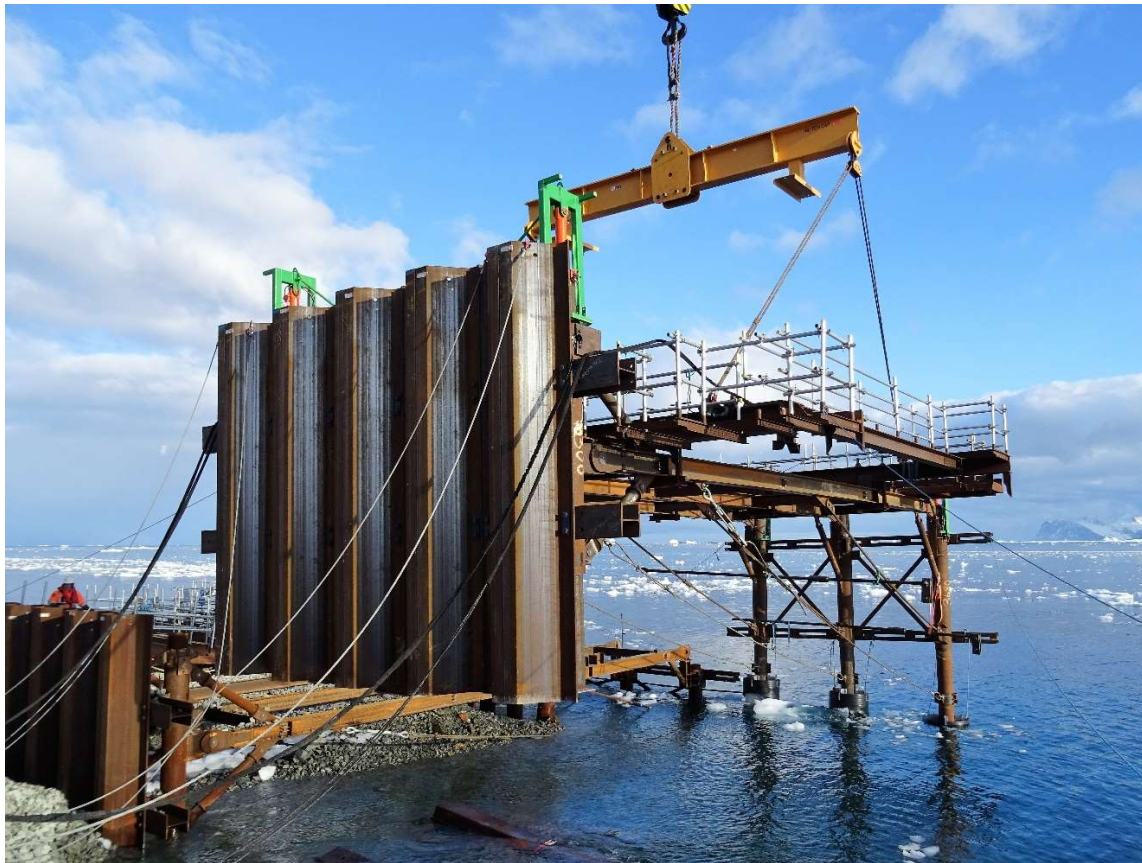
ArcelorMittal sheetpiles



ArcelorMittal sheetpiles



ArcelorMittal sheetpiles



Customer satisfaction ?

- For the same customer, we currently deliver 527 tons of sheetpiles for the reconstruction of King Edward Point wharf in Sandwich Islands
- [Http://www.youtube.com/watch?v=U1HhcXjAkRc](http://www.youtube.com/watch?v=U1HhcXjAkRc)

